

IN THE CLAIMS:

Please amend Claims 1, 2, 4, 7-9, 13-19, 21-28 and 31, cancel Claims 6, 10, 11, 12, 13-15, 29 and 30, and add new Claims 32-35 as indicated below.

1. (Currently Amended) A method for assessing the performance of a hearing aid that includes an implanted hearing aid actuator, comprising:

positioning a test measurement device external to a patient having ~~the~~ an implanted hearing aid that includes a hearing aid actuator, wherein the test measurement device is separate from said hearing aid;

utilizing the test measurement device to generate at least one predetermined test signal that is provided by the test measurement device to said hearing aid and to obtain at least one impedance measure of the hearing aid actuator responsive to ~~ana~~ resultant electrical signal passing through the hearing aid actuator; and,

employing the at least one impedance measure to assess the performance of the hearing aid actuator.

2. (Currently Amended) The method of Claim 1 wherein the employing step includes:

comparing the at least one impedance measure to a first predetermined range to assess-a ~~first performance parameter~~ one of the operability of the hearing aid and an interface between the hearing aid actuator and a component of an auditory system of the patient.

3. (Original) The method of Claim 2, further comprising:
providing an output indicative of whether the at least one impedance measure is within the first predetermined range.

4. (Currently Amended) The method of Claim 2, wherein the employing step, includes:

comparing the at least one impedance measure to a second predetermined range to assess ~~a second performance parameter~~ the other one of said operability of the hearing aid and said interface between the hearing aid actuator and a component of an auditory system of the patient, wherein the second predetermined range is at least partially non-overlapping with the first predetermined range.

5. (Original) The method of Claim 4, further comprising:

providing an output indicative of whether the at least one impedance measure is within the second predetermined range.

6. (Cancel)

7. (Currently Amended) The method of Claim 64, wherein the at least one predetermined test signal has a frequency within a predetermined range of a resonant frequency of the actuator.

8. (Currently Amended) The method of Claim 61, wherein the utilizing step includes:

selectively interconnecting the test measurement device to an external transmitter of the hearing aid;

transmitting the at least one predetermined test signal from the test measurement device to the external transmitter; and,

inductively coupling the at least one test signal between an the external transmitter and a subcutaneous coil of the hearing aid, wherein the subcutaneous coil provides the electrical signal to the actuator.

9. (Currently Amended) The method of Claim 61, wherein the utilizing step includes:

transmitting the at least one predetermined test signal to a speaker located external to the patient, wherein the at least one predetermined test signal is acoustically provided by the speaker

providing the at least one test signal to an implanted microphone of the hearing aid;
~~wherein the implanted microphone provides the electrical signal to the actuator.~~

10. (Cancel)

11. (Cancel)

12. (Cancel)

13. (Cancel)

14. (Cancel)

15. (Cancel)

16. (Currently Amended) The method of Claim 1, wherein the utilizing step comprising comprises:

measuring a voltage of the electrical signal passing through the hearing aid actuator; and

measuring a current of the electrical signal passing through the hearing aid actuator.

17. (Currently Amended) The method of Claim 16, wherein the utilizing step of ~~utilizing~~further comprises:

obtaining the measured voltage and current in the test measurement device; and
computing the impedance measure from the voltage and current measurements.

18. (Currently Amended) The method of Claim 1, wherein the step of utilizing includes:

providing a plurality of predetermined test signals for use in generating a corresponding plurality of electrical signals passing through the hearing aid actuator, wherein the plurality of predetermined test signals includes a corresponding plurality of different frequencies distributed across a predetermined frequency range.

19. (Currently Amended) The method of Claim 18, wherein the utilizing step further includes:

using the test measurement device to obtain a plurality of impedance measures corresponding to the plurality of electrical signals passing through the actuator.

20. (Original) The method of Claim 19 wherein the employing step includes:
identifying a resonant frequency of the actuator using the plurality of impedance measures.

21. (Currently Amended) A system for assessing the performance of a hearing aid that includes an implanted hearing aid actuator, comprising:

a test measurement device having a signal generator to ~~output~~generate a test signal at a predetermined frequency, that generates said test measurement device being separate from and positionable external to a patient having an implanted hearing aid that includes a hearing aid actuator wherein said hearing aid passes at least one electrical signal passing through the hearing aid actuator in response to said test signal;

voltage and current measurement logic to measure a voltage and a current of the at least one electrical signal; and,

a signal processing unit to process the voltage and current measurements to compute at least one impedance measure and to provide an output usable to assess the performance of the hearing aid.

22. (Currently Amended) The device of Claim 21, wherein the signal processing unit is configured to ~~compute at least one impedance measure and~~ compare the at least one

impedance measure to a first predetermined range to assess ~~a first performance parameter~~ one of the operability of the hearing aid and an interface between the hearing aid actuator and a component of an auditory system of the patient.

23. (Currently Amended) The device of Claim 22, comprising:
a user interface to provide a first output, wherein the first output is indicative of the first performance parameter.

24. (Currently Amended) The device of Claim ~~23~~22, wherein the signal processing unit is configured to compare the at least one impedance measure to a second predetermined range to assess ~~a second performance parameter~~ the other one of said one of the operability of the hearing aid and said interface between the hearing aid actuator and a component of an auditory system of the patient, wherein the second predetermined range is at least partially non-overlapping with the first predetermined range.

25. (Currently Amended) The device of Claim 24, wherein the user interface provides a second output indicative of the second performance parameter.

26. (Currently Amended) The device of Claim 21, wherein the test signal has a frequency within a predetermined range of a resonant frequency of the actuator.

27. (Currently Amended) The device of Claim 21, wherein the signal generator is configured to provide a plurality of predetermined test signals for use in generating a corresponding plurality of electrical signals passing through the hearing aid actuator, wherein the plurality of predetermined test signals include a corresponding plurality of different frequencies distributed across a predetermined frequency range.

28. (Currently Amended) The device of Claim 27, wherein the voltage and current measurement logic is configured to measure a plurality of voltage and current measurements corresponding to the plurality of electrical signals passing through the hearing aid actuator.

29. (Cancel)

30. (Cancel)

31. (Currently Amended) The device of Claim 21, wherein the signal generator comprises:

an oscillator for generating the test signal;

a test control processor to set the oscillator to generate the test signal; and

a reference transmitter to provide the test signal to ~~the actuator~~ one of a speaker and an

external transmitter of the hearing aid.

32. (New) A method for assessing the performance of a hearing aid that includes an implanted hearing aid actuator comprising:

positioning a test measurement device external to a patient having an implanted hearing aid that includes a hearing aid actuator;

utilizing the test measurement device to obtain at least one impedance measure of the hearing aid actuator responsive to an electrical signal passing through the hearing aid actuator;

employing the at least one impedance measure to assess an interface between the actuator and a component of an auditory system of the patient; and

providing an electrical input to a positioning system responsive to said assessment of said interface, to selectively position the hearing aid actuator relative to the component of the auditory system.

33. (New) The method of Claim 32, wherein the step of providing the electrical input comprises:

providing a wireless signal to the positioning system from a position external to the patient.

34. (New) The method of Claim 32, wherein the step of providing the electrical input comprises:

inductively coupling the electrical input to the positioning system.

35. (New) The method of Claim 21, wherein said test measurement device includes said signal processing unit.